

Serial No. 10/516,085
Atty. Doc. No. 2002P04430WOUS

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application. Applicant reserves the right to pursue any cancelled claims at a later date.

1 – 27 (canceled)

28. (new) A method for uniformly removing an MCrAlY bonding layer disposed over a component, the bonding layer comprising one or more degradations which result in different reactivity in an acid bath compared to MCrAlY bonding layer regions lacking said degradations, the method comprising:

a first step, coarsely removing portions of the bonding layer;

subsequent to the first step, completely diffusing from a gas phase a diffusion agent comprising at least two elements into a remaining portion of the bonding layer, wherein the completely diffusing the diffusion agent causes a phase change in the remaining portion of the bonding layer so that both degraded and non-degraded regions of the bonding layer exhibit a more uniform reactivity in the acid bath; and

uniformly removing the remaining portion of the bonding layer by exposure to the acid bath.

29. (new) The method of claim 28, the coarsely removing step comprising mechanical sand blasting, immersing the component in an acid bath, or both.

30. (new) The method of claim 28, the completely diffusing comprising diffusing a metal and a second element selected from the group consisting of silicon and carbon.

31. (new) The method of claim 28, the completely diffusing comprising diffusing aluminum as a first element and cobalt as a second element.

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32. (new) The method of claim 28, the completely diffusing comprising diffusing aluminum as a first element and cobalt as a second element, wherein the aluminum and cobalt diffusion into the remaining portion of the bonding layer causes γ and γ' phases to be converted into an aluminum-rich β phase, effective for allowing improved acid attack during the uniformly removing.

33. (new) The method of claim 28, the completely diffusing additionally comprising a heat treatment at a specified temperature effective for completely diffusing the diffusion agent into the remaining portion of the bonding layer.

34. (new) The method of claim 28, wherein the M of the MCrAlY bonding layer is an element iron, cobalt or nickel.

35. (new) The method of claim 34, wherein the completely diffusing comprises plasma spraying.

36. (new) The method of claim 34, wherein the completely diffusing comprises evaporation coating.

37. (new) The method of claim 34, wherein the completely diffusing comprises chemical vapor deposition.

38. (new) A method for uniformly removing an MCrAlY bonding layer disposed over a component, the bonding layer comprising a partial area comprising corrosion products, the method comprising:

a first step, coarsely removing portions of the bonding layer;

subsequent to the first step, completely diffusing from a gas phase a diffusion agent comprising at least two elements into a remaining portion of the bonding layer; and

mechanically removing the partial area,

wherein the completely diffusing of the diffusion agent has enabled the partial area to become sufficiently brittle for the mechanically removing.

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39. (new) The method of claim 38, the bonding layer comprising a metal compound, and the coarsely removing step comprising mechanical sand blasting, immersing the component in an acid bath, or both.

40. (new) The method of claim 38, the completely diffusing comprising diffusing a metal and a second element selected from the group consisting of silicon and carbon.

41. (new) The method of claim 38, wherein the applying the diffusion agent causes a phase change in the remaining portion of the bonding layer.

42. (new) The method of claim 38, the completely diffusing additionally comprising a heat treatment at a specified temperature effective for completely diffusing the diffusion agent into the remaining portion of the bonding layer.

43. (new) The method of claim 38, wherein the M of the MCrAlY bonding layer is an element iron, cobalt or nickel.

44. (new) The method of claim 43, wherein the completely diffusing comprises plasma spraying.

45. (new) The method of claim 43, wherein the completely diffusing comprises evaporation coating.

46. (new) The method of claim 43, wherein the completely diffusing comprises chemical vapor deposition.

47. (new) The method as claimed in claim 38, the mechanically removing selecting from the group consisting of sand blasting, ultrasound treatment, and dry ice blasting.